



OUTWARDLY MOBILE

Whether you're sitting in traffic or up a mountain, you can still access the internet if you've got a phone in your pocket. **Jon Corke** explains everything you need to know

The internet is now truly mobile. It's easier than ever before to get online when you're out and about, whether you want to Google the name of that untried beer in the pub or update your Facebook entry on the move. The number of wandering web users is constantly growing: a report from ComScore and Telephia earlier this year revealed that the number of people in the UK who access the internet from a mobile device is almost a fifth of the size of those who use PCs to go online. According to the study, 5.7m people used a mobile device to access the web in January 2007, compared with 30m people (aged 15 or older) who used a PC to do the same.

One reason we're all browsing the web on our phones is that the handsets are now so much easier to use. Every current mobile phone worth its salt comes with a Wireless Application Protocol (WAP) browser, enabling access to simplified internet sites on the move. In the past, browsing on a handset was a dismal experience, with minimal text-based pages taking an age to load. However, hardware has vastly improved, and it's a far more enjoyable and user-friendly

experience these days. Today's mobiles have large colour displays and fast processors that can render sites quickly and legibly – ideal for checking weather reports and news headlines.

Many mobile internet sites are tailored for WAP browsers and smaller screens. However, a growing range of smartphones include proper web browsers that let you view full websites on the move. Coupled with high-speed 3G data services, it's almost like having a little broadband-connected PC in your pocket.

Here we'll explain everything you need to know about the mobile internet: how to choose a handset, what sort of tariff to pick, which mobile web browser to use and how to set your phone up to go online.

HIGH-SPEED DATA OPTIONS

The fact that you can download full-length music tracks and videos on a mobile phone has created a need for download speed. Nobody wants to spend half an hour downloading a single music track. Luckily, the networks seem to be desperately trying to outdo each other in offering the fastest data rates.

A variety of mobile data protocols are in place, each of which offers different transfer speeds measured in kilobits per second (Kbit/s) or megabits per second (Mbit/s). The maximum rates quoted generally refer to optimum network conditions, although in practice these are unrealistic, and the actual rates you achieve will be significantly lower. Your handset will automatically attempt to connect using the fastest protocol available without your having to get involved.

The most common form of data transfer is General Packet Radio System (GPRS), which is available on almost all GSM mobile phones. It has speeds up to 115Kbit/s and is often referred to as 2.5G – a technology that lies between 2G and 3G. Once connected, it can remain active in the background on your phone for long periods, whether or not you're actually browsing or downloading. GPRS is commonly charged per megabyte of data used rather than the amount of time spent online, and some networks offer flat-rate packages for unlimited data.

A less common service is Enhanced Data rates for GSM Evolution (EDGE), which is



currently available on only a limited number of handsets on the Orange network in the UK. Although technically a 3G technology, it's often referred to as 2.75G as it offers slower data speeds of up to 236Kbit/s.

Next is 3G, a third-generation mobile technology that offers fast data transfer speeds of up to 384Kbit/s and supports a higher capacity of users, so more customers can use the network at the same time. Each major UK network now offers a 3G service, with a growing number of compatible handsets on the market and widespread national coverage. If you do stray out of 3G's area of coverage, however, the handset will automatically revert to GPRS.

Finally, the current leader in the mobile data speed race is High-Speed Downlink Packet Access (HSDPA), an advanced 3G protocol that offers even faster speeds and capacity. Often referred to as 3.5G, HSDPA can race at speeds of up to 3.6Mbit/s, and could double to 7.2Mbit/s next year. All five major UK networks currently offer HSDPA in major cities, and a small number of compatible handsets are available.

For details on how to set up a handheld device to support any of these protocols, see the How To guide opposite.

WIFI

Many of today's cutting-edge smartphones have WiFi, which enables wireless internet access over a local network. Most handsets use 802.11b, which runs at 11Mbit/s, although faster 54Mbit/s 802.11g phones have been announced. For details on how to set up WiFi on a handheld device, see our guide on page 132.

The major advantage of WiFi is that it's a simple and cost-effective means of getting online when you're out and about. The disadvantage is that, despite there being over two million WiFi hotspots in the UK, it's not always convenient to visit one and finding one can be tricky, particularly if you're in an unknown city.

The website www.totalhotspots.com provides a service that lets you locate your nearest wireless venue simply by texting the word 'hotspot' to 84140. The service costs £1 a request, and you receive the name, address and telephone number of the nearest hotspot by text.

One potential killer application, which could give WiFi a huge competitive edge over other similar technologies, is free VoIP calls over the internet. This would make manufacturers of WiFi handsets happy, but could pose a threat to mobile network operators. However, rather than competing with VoIP companies, the networks are more likely to create partnerships and offer combined services. For example, 3 offers free Skype calls as part of its X-Series range.

THE NETWORKS

So how do you access these data services? First you need to pick a network. The five major UK networks (3, O₂, Orange, T-Mobile and Vodafone) have different data services aimed at both casual and heavy users. We will look at each network's tariffs, including the types of connectivity on offer and the pricing structures. Some networks offer unlimited data packages, although these are usually subject to a fair usage policy whereby a maximum upper limit is imposed. However, the limits are high and designed purely to prevent abuse of the service. As long as you're not downloading entire TV series every week, you'll be fine.

3 X-SERIES

As the name suggests, 3 is solely a 3G network (www.three.co.uk). Its coverage is increasing all the time and now covers around 90 per cent of the country, with the focus on major cities. If you do wander out of a coverage zone, the handset automatically reverts to a 2.5G service (on the O₂ network) and you continue your browsing session unaffected. In its infancy 3 adopted a 'walled garden' approach, restricting users to a limited number of sites on its own portal, but thankfully it now offers full web access.

3's top-of-the-range mobile internet offering, the X-Series, is highly competitive. You can choose from a wide range of handsets, with high-end smartphones, including Nokia's E65 and Sony Ericsson's W950i alongside competent all-rounders from Motorola and LG. Pick an X-Series price plan, ranging from £20-£50 a month, to receive unlimited mobile data (up to 1GB fair usage) and free Windows Live Messenger, with bookmarked sites such as Yahoo!, Google and eBay. For an extra £5 a month you can upgrade to X-Series Silver for unlimited Skype calls and Mobile Mail (3's email service), while for £10 a month X-Series Gold adds access to Slingbox (enabling you to watch your home TV on your mobile) and Orb (for streaming files on your PC to your phone).

O₂ ACTIVE

The mobile internet service from O₂ (www.o2.co.uk) is decidedly old school, based around the network's own WAP portal, O₂ Active. You get access to a range of recognisable sites, including eBay, Sky and the BBC, plus entertainment portals from magazines including *Glamour*, *Heat* and *FHM*. Web browsing is limited to reduced, 'made for mobile' sites rather than the true, free internet.

O₂ offers full browsing on its top-of-the-range smartphones in its Xda range, including the WiFi-enabled Xda Orbit and Xda Graphite. Both phones use Windows Mobile and have Pocket Internet Explorer. Both products are available for free on an 18-month contract.

O₂ still retains an antiquated pricing structure for consumer mobile data. Pay-monthly high street tariffs of less than £35 a

month include a miserly 100KB browsing allowance. This increases to a paltry 512KB for tariffs over £35 a month. Buying online increases the allowance to 1MB on all tariffs. Regular internet users will almost certainly need to add a Consumer Data Bolt On; each month you can get an extra 2MB of data for £3, 4MB of data for £5 or 20MB of data for £10. This applies to Pay As You Go customers too.

ORANGE WORLD

Mobile internet on Orange (www.orange.co.uk) is similar to that of O₂, as it's centred around the dedicated network portal Orange World. Like O₂ Active it offers a variety of content from the worlds of sport, music and film in a bite-size, made-for-mobile format. Orange World is available on a diverse range of GPRS and 3G handsets from all the top manufacturers, plus EDGE devices such as Motorola's RAZR2 V8. The best internet experience is found on its SPV range of Windows Mobile handsets. The pick of the bunch is the SPV E650, a compact smartphone running Windows Mobile 6.0 with a slide-out QWERTY keyboard.

All Orange tariffs ranging from £20-£75 a month come with an initial two months free browsing, after which they include a daily surcharge of £1.50 for unlimited browsing (up to 25MB fair usage). Contract customers can add an unlimited evening and weekend browsing bundle for £5 a month, or for £4 a month can get 4MB of data at any time (with a £1 charge for each additional megabyte). Alternatively, contract customers can buy data for £3 per megabyte on a pay-as-you-use basis. Prepay customers pay a daily charge of £1 to access Orange World, no matter how much data they use.

T-MOBILE WEB'N'WALK

T-Mobile (www.t-mobile.co.uk) was the first network to launch an unlimited data package for a fixed monthly fee in 2005, with its pioneering web'n'walk tariffs. They are still just as popular today, and other networks have followed suit with similar packages of their own. The built-in web'n'walk software has a direct link to the Google homepage and links to frequently

Browse about that then Mobile internet sites

Many mobiles can access the full internet these days, but you can keep those data charges to a minimum by accessing cut-down versions of popular sites, such as these three:

BBC

www.bbc.co.uk/mobile

Simplified site with news, sport, TV and entertainment in an easy-to-read format.



Google

<http://wap.google.com>

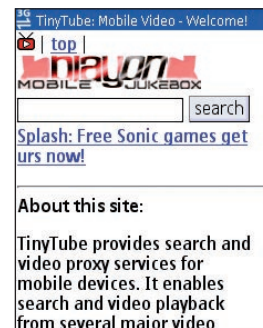
A basic version of the popular search engine with access to your Gmail account.



Tinytube

<http://tinytube.net>

This nifty site lets you view and upload videos from websites such as YouTube.





accessed internet sites, including T-Mobile's own network portal, T-zones.

A wide variety of web'n'walk handsets are available, ranging from stylish everyday phones such as Samsung's U600 slider and Sony Ericsson's W880i Walkman to advanced smartphones including Nokia's N95. T-Mobile has its fair share of Windows Mobile devices too, including the MDA Vario series of PDA-like phones with slide-out keyboards, and the futuristic Ameo device with its 5in screen and detachable magnetic keyboard.

Web'n'walk costs £7.50 a month when added to any Flex or U-Fix voice plan for unlimited data (up to 1GB fair usage). Alternatively, both contract and prepaid customers can pay £1 a day for unlimited data (up to 40MB fair usage).

VODAFONE MOBILE INTERNET

Vodafone's (www.vodafone.co.uk) recent advertising claim that "the internet is now mobile" is a little spurious considering

web'n'walk launched two years ago and tech-heads were accessing the internet on mobile phones some time before that, but it's a decent proposition nonetheless.

Vodafone Mobile Internet takes its lead from T-Mobile's web'n'walk, offering unlimited data for a fixed monthly fee. The network has teamed up with a host of internet brands, so you'll get one-click access to sites such as eBay, the BBC, YouTube and MySpace, along with Vodafone's own Live! portal.

As the UK's largest network, Vodafone has a huge number of internet-ready handsets on offer from the major manufacturers. Hot picks include the HSDPA-enabled Moto Z8 smartphone with a stunning 16-million colour screen, and Nokia's widescreen E61.

New customers on all Anytime data plans get their first month of browsing for free, after which they pay £7.50 a month for up to 120MB of data, then £1 per day. Alternatively, contract and prepaid users can pay £1 a day (up to 15MB then £2 per MB).

HANDSETS

If you're serious about using the internet on the move, the best option is to get a smartphone with advanced features and a good sized screen. There are three different types of smartphone operating systems on the market: Symbian Series 60, Windows Mobile and Symbian UIQ.

Symbian Series 60 is used on Nokia's phones. It has around 50 devices to date, including notable ranges such as the NSeries and ESeries. All handsets use Nokia's own-brand web browser, which makes navigating large websites easy thanks to its use of onscreen page miniatures and a visual history of previously viewed pages. Nokia smartphones are widely available on all networks.

Windows Mobile devices feature a menu system that PC users will recognise instantly, and a Pocket version of Internet Explorer for browsing. Most Windows Mobile smartphones are produced by a company called HTC, with branded versions appearing on the networks under different guises. For example, the HTC

HOW TO... Set up for HSDPA, 3G and GPRS

Here we will show you the settings you need to access the internet over an HSDPA, 3G or GPRS (non-3G) connection. Many mobiles have the settings pre-installed and are ready to connect to the internet out of the box, but this is not always the case. If you buy a handset without a SIM, or you want to use a SIM from a different network in an unlocked handset, you need to enter the correct settings. We've used a Nokia Series 60 smartphone. For other models the process may be a bit different, but the settings are the same.

Some manufacturers can help you with this. Nokia provides a Phone Configurator at www.nokia.com/phonesettings and Sony Ericsson has a similar service at www.sonyericsson.com (select Support and then Phone setup). All the settings will be sent to your handset by text message and installed automatically.

1 The first step is to create a new Access Point for the mobile network you are on (in our case T-Mobile). Go to the Connection settings menu, which is located in Tools, Settings, Connection, and select Access points. Then select Options, New access point, Use default settings. You can create as many different Access Points as you like, one for each network if required.

2 Give your Access Point a Connection name. Anything will do, but for simplicity we chose the name of the network. The Data bearer is Packet data. The most

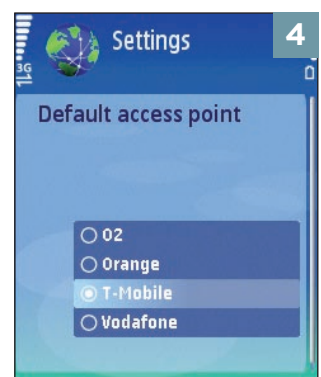
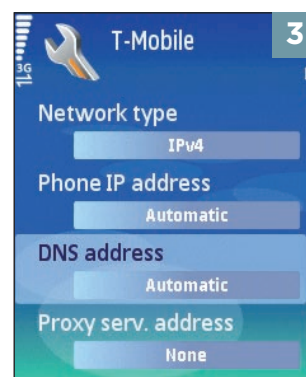
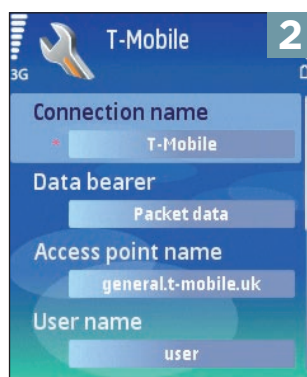
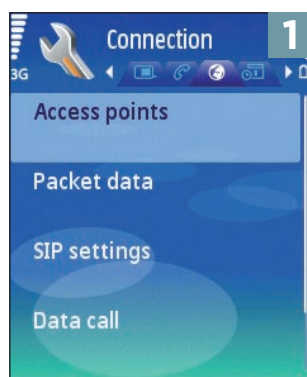
important setting is the access point name (APN): this is the gateway by which you get online. Enter this exactly as it appears in the table below, along with the relevant username and password. For the homepage you can select any internet site. Typically this would be the network's dedicated portal as listed. In our example we have entered settings for T-Mobile – the data will be different on other networks. These are the full settings required for each UK network. Note that for the 3 network you will need to visit the website (www.three.co.uk) and sign up for Wireless Web.

3 You may also have to enter the Primary DNS or IP address. If so, select Options, then Advanced Settings. The Network type is IPv4 and the Phone IP address is Automatic. Under DNS address enter the Primary DNS from the table below (leave it set to Automatic for T-Mobile).

4 The final step is to ensure that the handset's browser is accessing the web via the correct Access Point. Open your browser's settings menu (in our case the generic Series 60 application under Options, Settings) and select the relevant Access Point from the list.

MOBILE INTERNET SETTINGS

NETWORK	APN	USERNAME	PASSWORD	HOMEPAGE	PRIMARY DNS
O ₂	mobile.o2.co.uk	mobileweb	password	www.pda.o2.co.uk	119.113.200.200
Orange	orangeinternet			spv.orange-today.co.uk	193.035.131.194
T-Mobile	general.t-mobile.uk	user	wap	www.t-mobile.co.uk	Set automatically
Vodafone	internet	web	web	www.vizzavi.co.uk/pda	158.043.240.004





HOW TO...

Set up your phone for WiFi

If you're lucky enough to have a smartphone with WiFi, such as an O₂ Xda Orbit, this is the quickest and easiest way to access the internet. In this walkthrough we show you how to use WiFi on the handset by connecting to a wireless network. For this example we used a smartphone running the latest Windows Mobile 6.0 operating system, but Windows Mobile 5.0 and Series 60 handsets connect in much the same way.

1 First you need to ensure that WiFi is turned on. Open the Comms Manager application in the Start menu under Settings, Connections. If the WLAN icon is highlighted, WiFi is on; if it isn't, click on the icon to activate it. Click on Settings, select WLAN Settings from the list provided and then click on WiFi. A list of available WiFi networks in your area will be displayed.

An icon displaying signal strength (with a padlock denoting a secure network) is also shown next to each network's name.

2 Click on the Menu button and select WiFi settings from the list. The WiFi Networks settings screen is displayed. Here you can determine whether you want to connect to another device or computer rather than a network through an access point. For our purposes, select All available.

In this menu you can choose if you want to be notified when you come within range of a new network. You can also choose to turn off WiFi after a certain amount of time when no signal is detected, in order to conserve battery power. When you have finished, select Done.

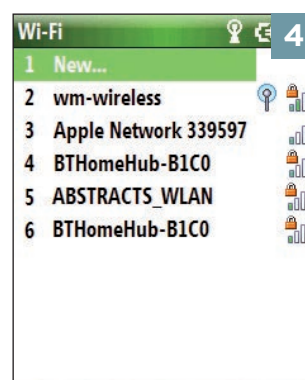
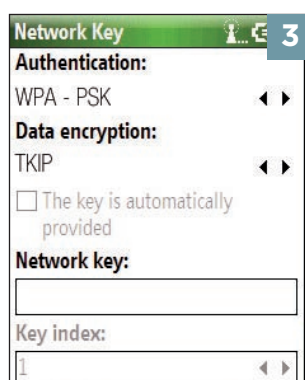
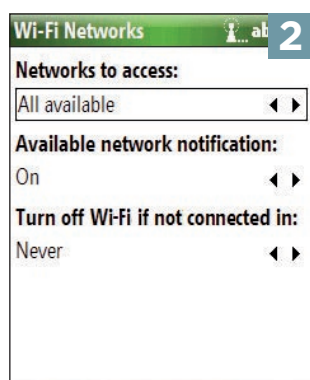
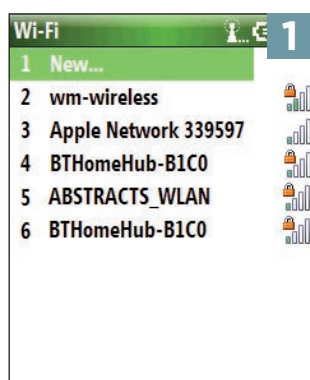
3 You will now automatically return to the list of WiFi networks. Scroll down to the one you wish to access and select Connect. A WiFi connections screen with basic details of the network will be shown – select Next. The Network Key screen will now be displayed. If it's

an open network, you can simply select Finish, but for secure networks you will need to enter the Network's encryption key.

Most modern networks will use WPA-PSK, which requires a password. This and any other required settings will be available from the network administrator. Type the password into the box marked Network key and select Finish.

You need only enter the password once for each network and the handset will automatically connect to the previously used network each time it comes into range.

4 Now when you return to the list of networks, a blue icon signifies the one you are connected to and the WiFi icon on the top green strip displays a full white circle to signify that you are connected. The name of the wireless network appears at the top of the home screen (clicking on the name is a quick way to access the WiFi menu).



S710 appears on Orange as the SPV E650 and on Vodafone as the v1415. Alternatively, you can buy a SIM-free version from a company such as Expansys (www.expansys.com).

Sony Ericsson has a preference for Symbian UIQ devices. Its recent P1i is an excellent option, with a touch-screen interface and a full keyboard.

OPERA MINI

You can still get a decent mobile internet experience without a smartphone. Whichever mobile you choose it's sure to come with a built-in browser, but that doesn't mean you have to stick with it. As with a PC, you have a choice of applications for viewing web pages. One recommended program for all mobiles is Opera Mini, a brilliant browser that automatically rescales websites to fit on your phone's screen. It achieves this by using a remote server to compress web pages before sending them to your phone, resulting in a smaller file size and faster browsing, even on basic handsets. The application makes it easy to download files such as images and documents from a website to your device, and includes a nifty photo-sharing feature for uploading pictures to an online blog.

There are three ways to get hold of Opera Mini. The easiest is to direct your current mobile

browser to operamini.com and click on the download link to load the application directly on to your handset (it will usually be filed in the Applications folder). Alternatively, visit the website on a PC and click on the SMS link to receive a text message containing a direct link to the software. If for some reason you are beyond the reach of your network and can't access the web on your mobile, you can still download the software to a computer. Click the 'desktop computer' link on the website, select your mobile from the list provided and download the program files. You can then transfer these to your mobile via Bluetooth or USB. Opera Mini is compatible with virtually every mobile phone on the market; there's a full list on the website.

THE FUTURE

That's everything you need to know about accessing the mobile internet now, but what does the future hold? The speed and convenience of mobile data is going to improve dramatically over the next few years. The Far East provides a good indication of what we might expect in the UK, and South Korea already has a next-generation service up and running. Its latest evolution of mobile data is WiBro (short for wireless broadband), a 4G technology similar to WiFi, but with a wider

range, higher speeds and greater mobility. In Seoul, this operates over a wide area, providing data access while the user is moving at high speeds of up to 120km/h, such as on a train or car journey. Most people use the service on notebook PCs but LG has already launched a smartphone that runs on the network. In the UK a similar system called mobile WiMAX is being developed, although this it could be some time before it's rolled out to consumers (see 'What's Next for Wireless?', *Shopper* October 2007).

In terms of handsets, we're sure to see increasingly powerful internet-ready devices, notably the WiFi-enabled Apple iPhone, which should be on sale by the time you read this. It features a built-in Safari web browser with a touch-screen interface that lets you scroll around and zoom into web pages by pinching the display with your fingers. When you hold the phone horizontally, the screen automatically flips to landscape viewing mode. With an impressive-looking Google Maps application, desktop-style Widgets and a YouTube player, this device could revolutionise the way we use websites on the move. The other manufacturers are sure to respond, and Nokia has already revealed plans for its own touch-screen interface due in 2008. Whichever way you look at it, the future is rosy for the mobile web.